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HE transitions technology to Nellis AFB

by Amy Hill, Human Effectiveness Directorate

NELLIS AIR FORCE BASE, Nev. — The Air Force Research Laboratory's Human Effectiveness Directorate and Compunetix, Inc. have delivered the first operational command and control (C2) communications switch with an embedded spatial audio capability to the 98th Range Wing, Nellis Air Force Base, Nev., for Air Combat Command (ACC).

The spatial audio capability was originally delivered to the range wing in June 2003, at which time it was determined that a legacy system attribute removed as part of the upgrade was required after all. At a demonstration in November 2003, the system was shown to have both the new spatial audio as well as all desired legacy attributes, marking completion of a successful government-contractor collaboration. The project is a milestone for the Warfighter Interface Division (HEC), as the Nellis C2 system represents a baseline battle management workstation for future tactical C2 systems.

ACC has long been after an exemplar system to 'point the way' for future system development, and invested in upgrading the Nellis hardware as part of a larger risk reduction effort for other battle management systems. The communications system is an integral part of the operator's suite of hardware and software, and gets regular use as part of daily operations on Nellis' ranges, including the syllabus for the Air Warfare Center's Weapons School. While the success of this venture came about from a collaborative mix inside and outside AFRL, HEC was the pivotal player in getting Nellis the spatial audio technology since the idea was first broached in December 2001.

HEC made a case for the technology to ACC using existing program data and demonstrations, and in March 2002, convinced both Nellis operators and ACC to fund an upgrade to a planned communications switch purchase with Compunetix. A month later representatives from AFRL, ACC, the 98th Operations Support Squadron (OSS), Compunetix, and the USAF Weapons School met to discuss how the upgrade would occur such that it didn't impact the delivery schedule of the switch. HEC provided GFE support to Compunetix to understand the technology, then licensed patent-pending work to the contractor for integration into the COTS system.

The end product had a payoff for both Compunetix and the government. Compunetix gained the ability to retrofit a family of systems. The Government successfully transitioned Lab technology—both HECB's spatial audio filtering and configuration and HECP's graphical user interface (GUI)—and reduced the risk for applying the same technology to the Airborne Warning And Control System (AWACS) Block 40/45 upgrade by creating a working version of the capability at Nellis first. The system at Nellis, while it obviously can't fly, has most of the capabilities sought for future tactical C2 systems, and enables tactics, techniques, and procedures to be examined using the system today, versus in 2007 when the first aircraft version is delivered.

In mid-June 2003, when it was determined that the system needed the legacy capability, HEC was heartened to learn that the operators wanted the spatial audio more, and were willing to live without the legacy capability until the system could be reworked. The system was determined fully functional in early November 2003, successfully concluding the technology transition.

According to Lt. Col. Brian Donnelly, HEC, "The upgrade we made to the communications switch at the 98th Range Wing's Combined Operations Center is the first-ever C2 comm system configured with a spatial audio capability, and it will be used by each new CCO [Command and Control Operations Division] class at the Weapons School. With this integrated capability, an entire community of operators can hear the subtle but powerful change in their communications." @